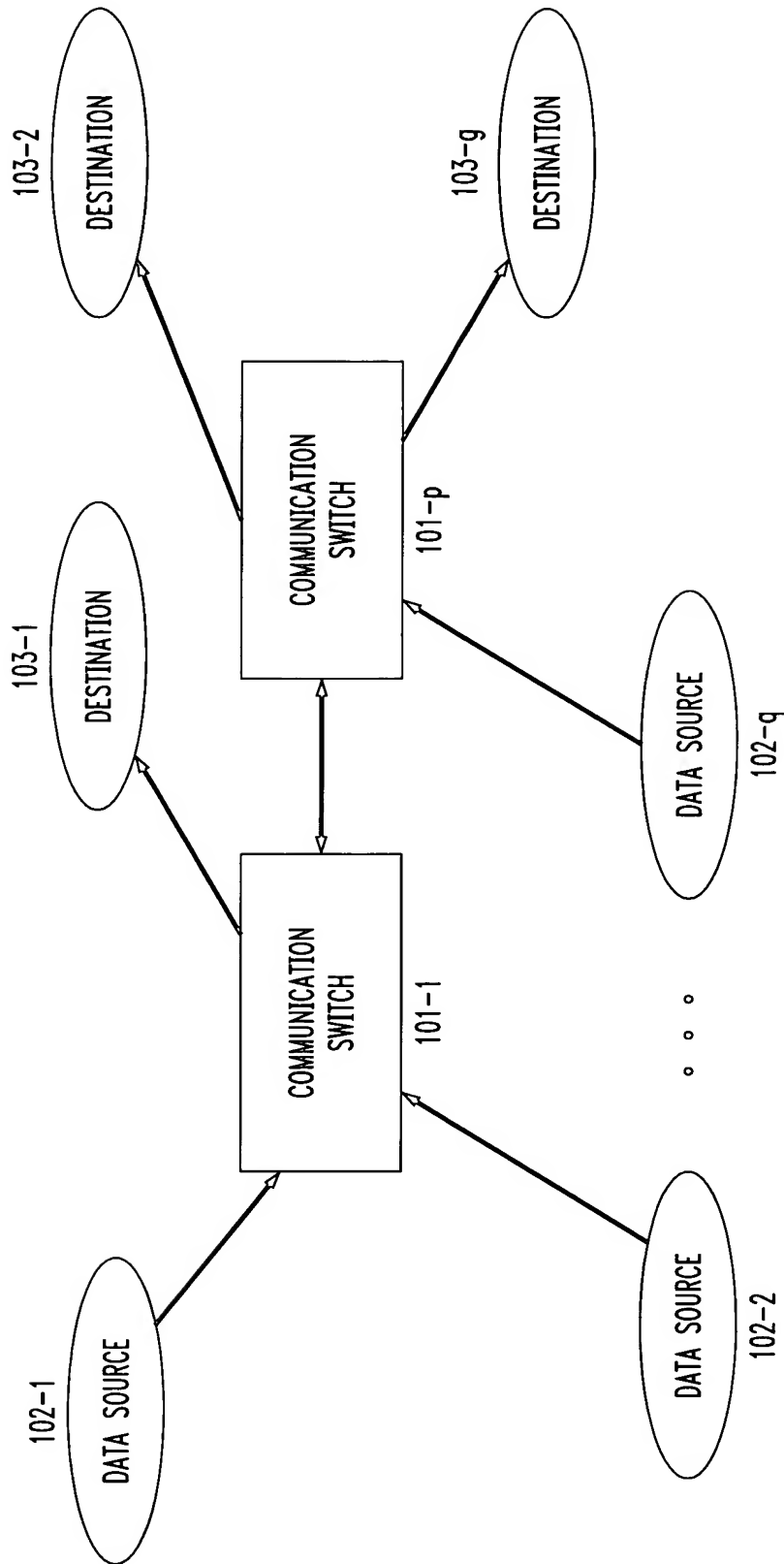


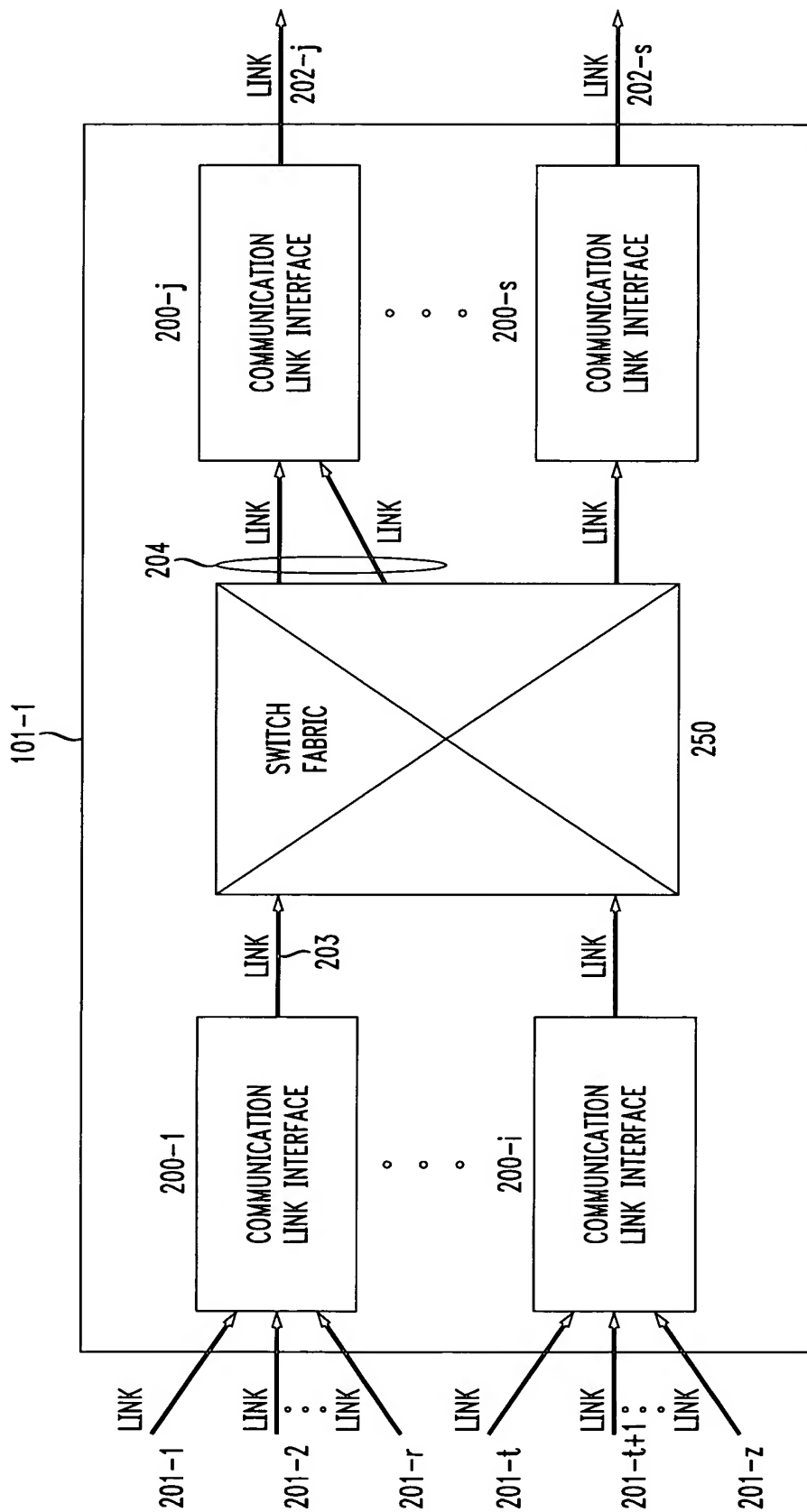


FIG. 1



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FIG. 2





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FIG. 3A

```
1  if (flow  $i$  is newly backlogged)
2       $F_i^k \leftarrow \frac{l_i^k}{\rho_i}$ 
3      Append  $i$  to the tail of the linked list
4  else /* A packet of  $i$  has just been transmitted */
5       $F_i^k \leftarrow F_i^{k-1} + \frac{l_i^k}{\rho_i}$ 
6      if ( $F_i^k \geq T_Q$ )
7           $F_i^k \leftarrow F_i^k - T_Q$ 
8          Conclude visit to flow  $i$ 
9      else
10         Keep servicing flow  $i$ 
```

FIG. 3B

```
1       $F_i^k \leftarrow F_i^{k-1} + \frac{l_i^k}{\rho_i}$ 
2      if ( $F_i^k \geq T_Q$ )
3           $F_i^k \leftarrow F_i^k - T_Q$ 
4          Conclude visit to flow  $i$ 
5      else if (flow  $i$  is still backlogged)
6          Keep servicing flow  $i$ 
```



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FIG. 4

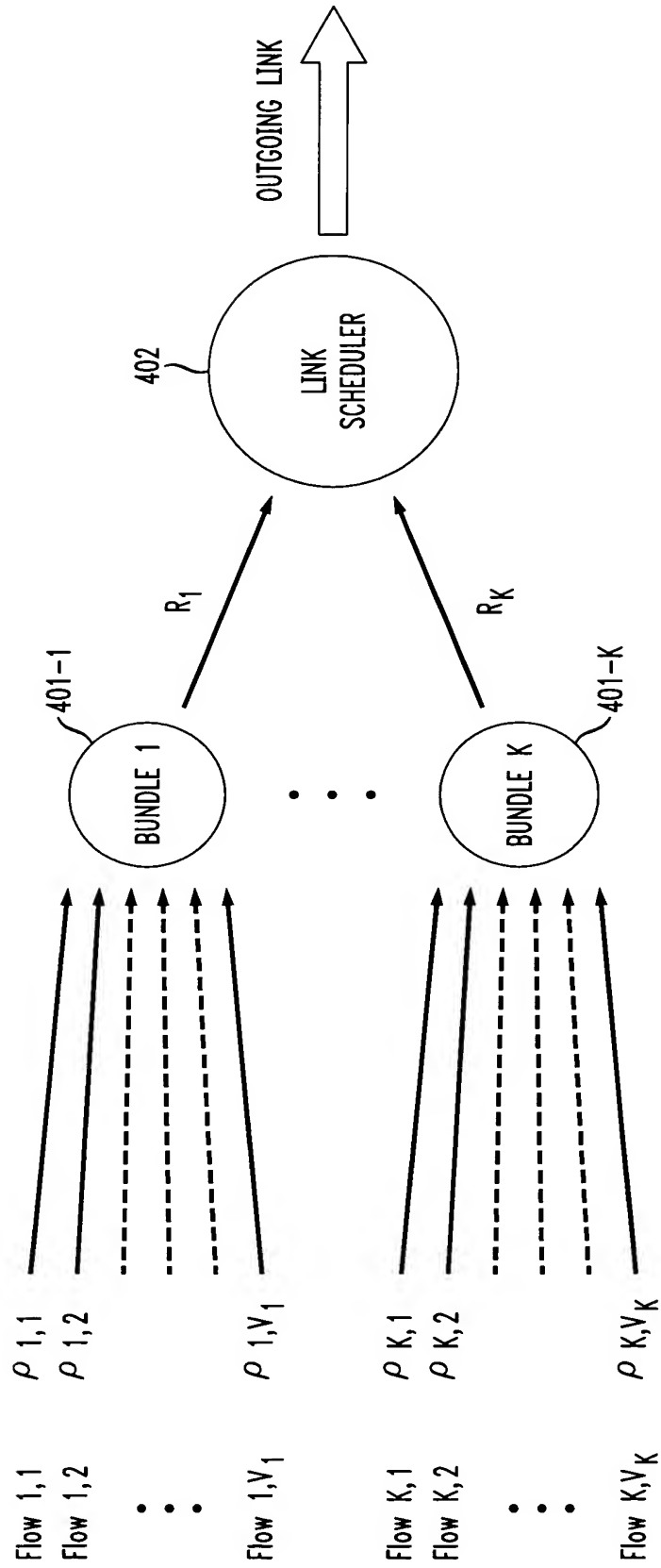
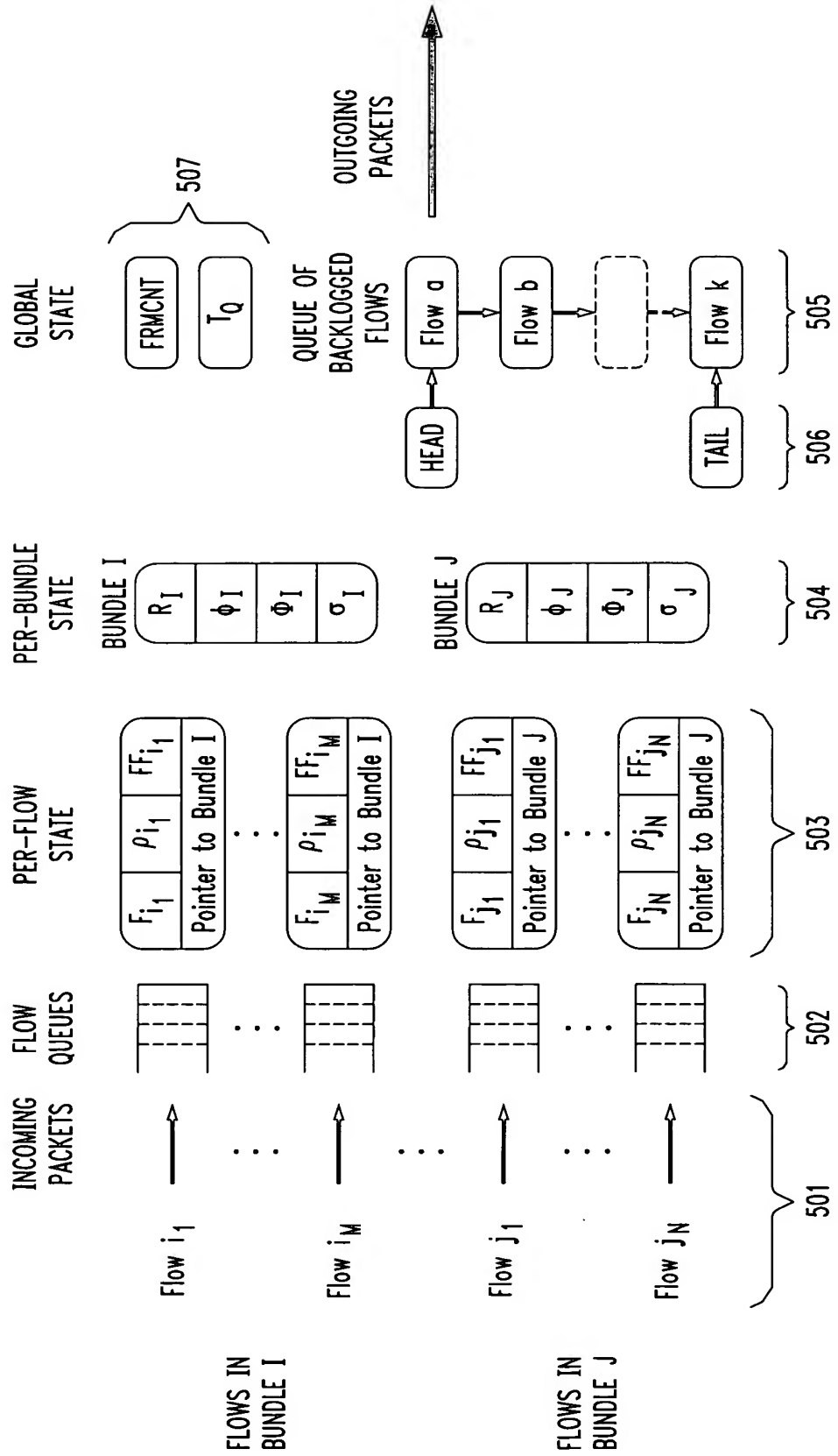


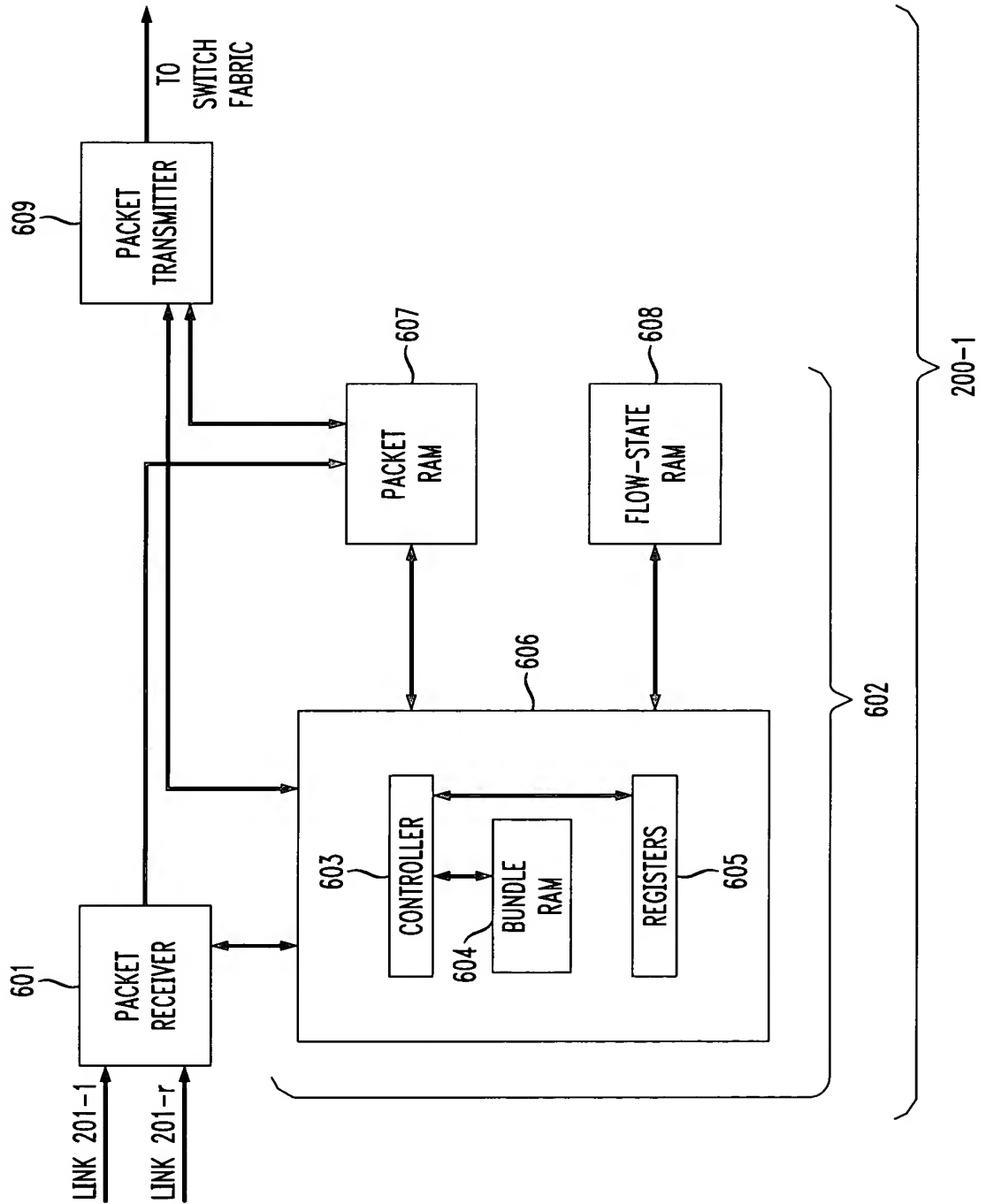
FIG. 5





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FIG. 6





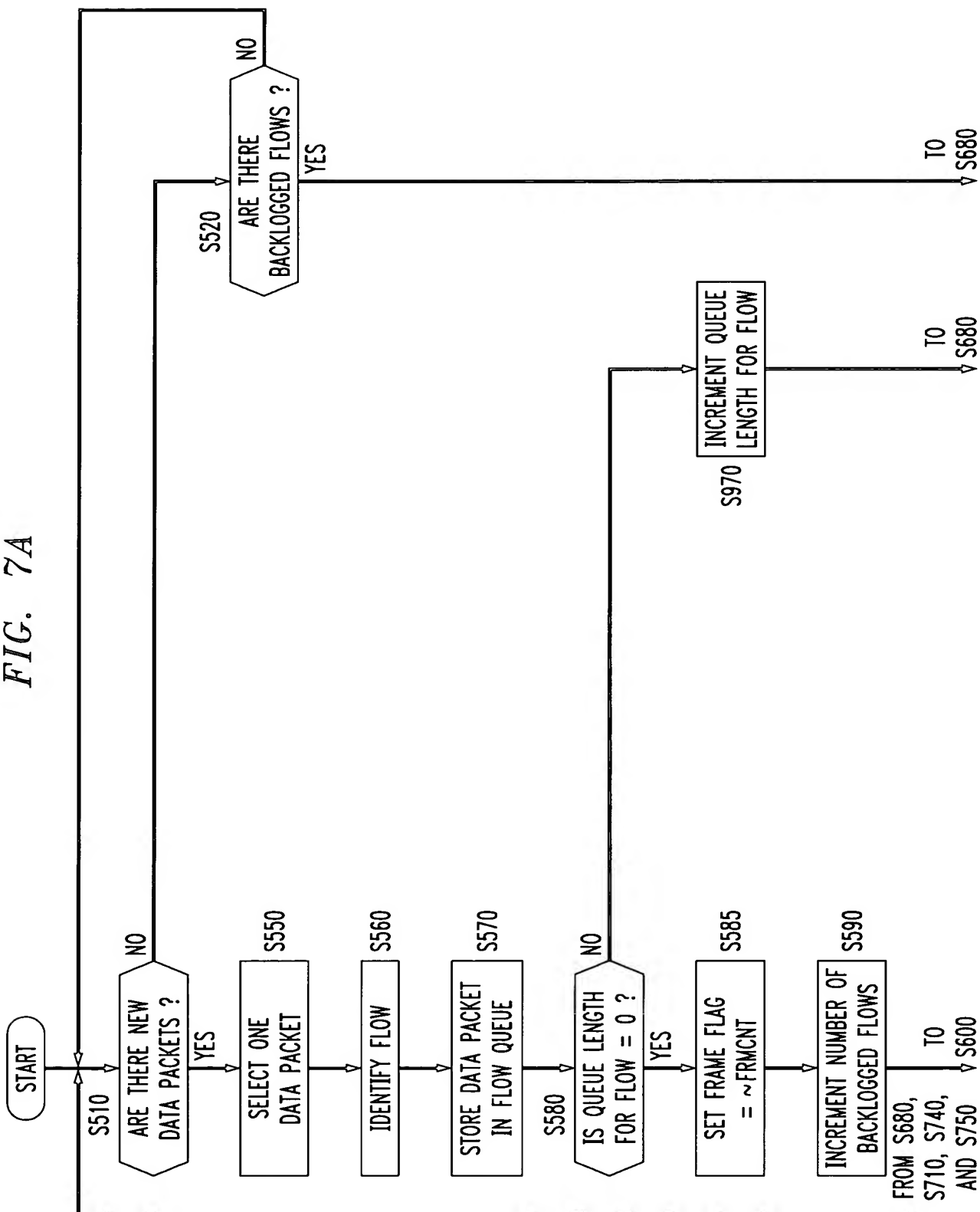
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FIG. 7

FIG. 7A
FIG. 7B
FIG. 7C
FIG. 7D

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FIG. 7A





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FIG. 7B

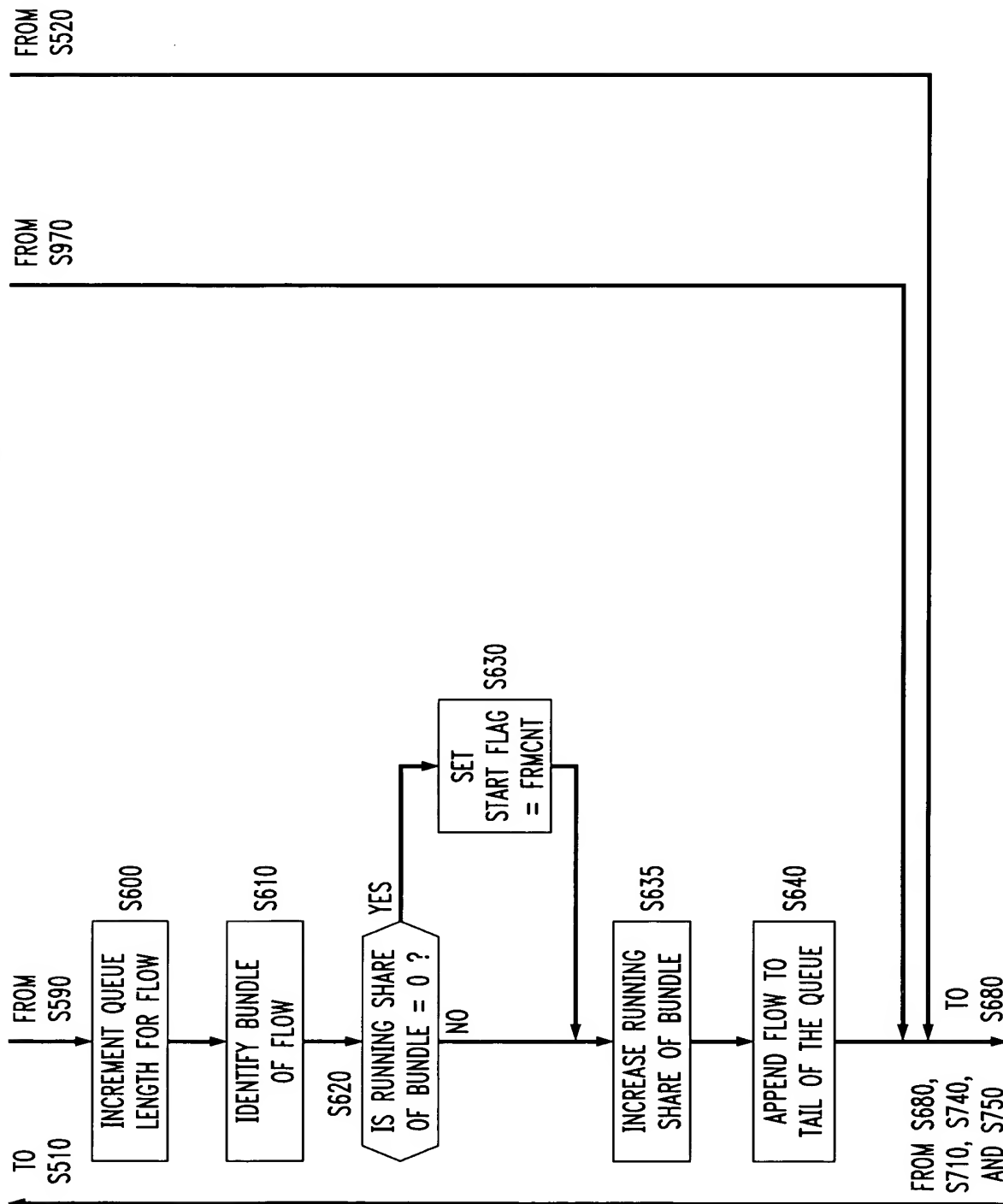
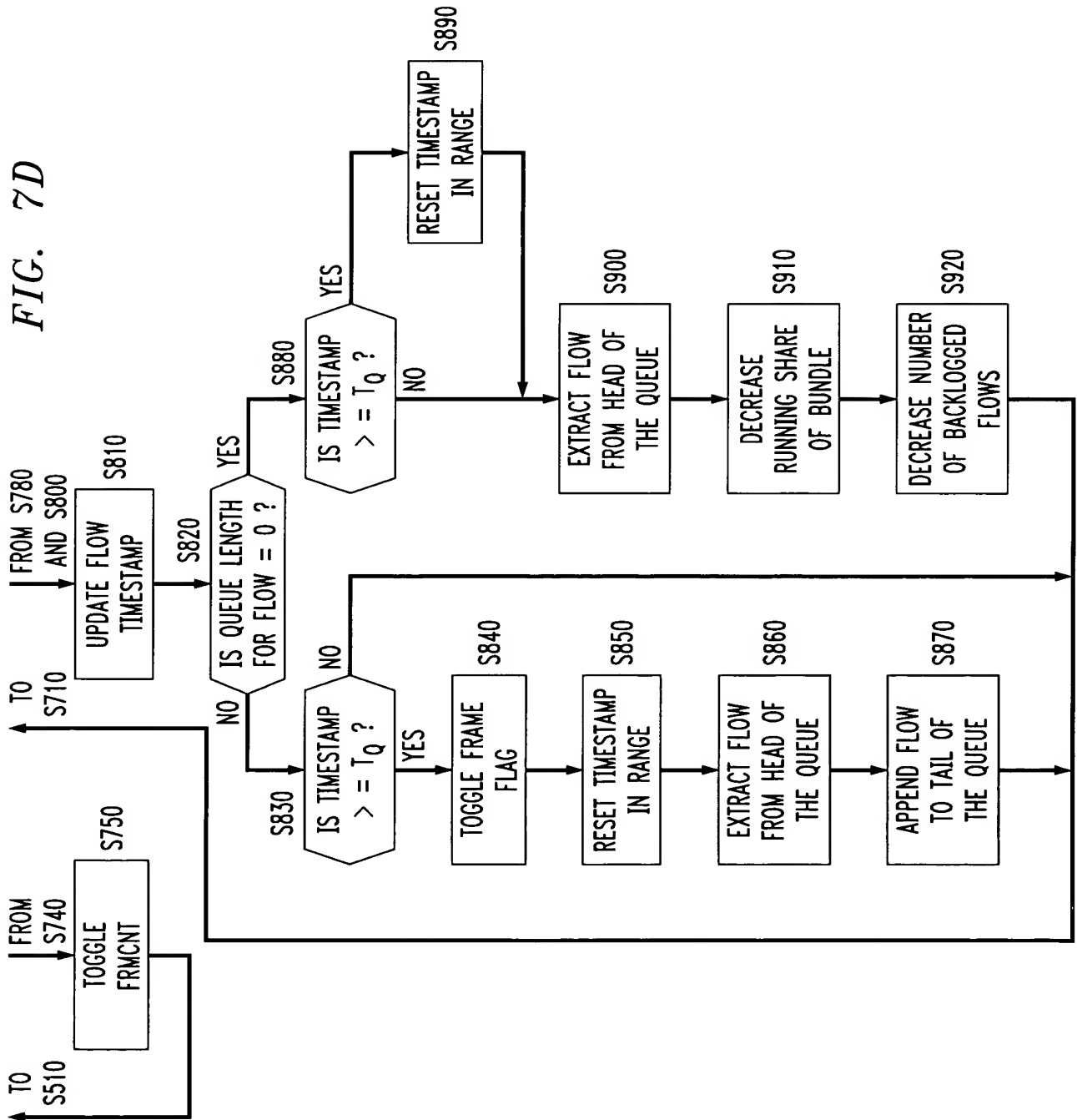






FIG. 7D





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FIG. 8

```
1  Identify flow  $i$  currently at the head of the linked list
2  Identify bundle  $I$  of flow  $i$ 
3  if ( $FF_i \neq FRMCNT$ )
4       $FRMCNT \leftarrow \neg FRMCNT$ 
5  Prepare head-of-the-queue packet  $p_i^k$  for transmission
6  if ( $\sigma_I \neq FRMCNT$ )
7       $\Phi_I \leftarrow \phi_I$ 
8       $\sigma_I \leftarrow FRMCNT$ 
9       $F_i^k \leftarrow F_i^{k-1} + \frac{l_i^k}{R_I} \cdot \frac{\Phi_I}{\rho_i}$ 
10 if ( $F_i^k \geq T_Q$ ) /* Frame over for flow  $i$  */
11      $F_i^k \leftarrow F_i^k - T_Q$ 
12      $FF_i \leftarrow \neg FRMCNT$ 
13     Extract flow  $i$  from head of linked list
14     if (Flow  $i$  is still backlogged)
15         Append flow  $i$  to tail of linked list
16     else /* Flow  $i$  is getting idle */
17          $\phi_I \leftarrow \phi_I - \rho_i$ 
18     else if (Flow  $i$  is getting idle)
19         Extract flow  $i$  from head of linked list
20          $\phi_I \leftarrow \phi_I - \rho_i$ 
```